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ABSTRACT

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CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

LEVELS OF ANALYSIS AND SOCIAL CLASS DIFFERENCES IN LANGUAGE

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OCTOBER 1970

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ABSTRACT

Previous studies have demonstrated that certain differences in speech behavior can be related to the social characteristics of speakers. However, these studies have not explicitly examined the effect of level of linguistic analysis on correlations observed between language variables and status variables. Three levels of analysis of a linguistic construction were selected for study: grammatical form, lexical choice and use of a predication type. The corpus was the speech of forty-eight dyads of children (male, female; low, middle socioeconomic status; Negro, white) performing three problem solving tasks. The grammatical form of the construction differentiated between social groups, sexes and races. Lexical choice within the construction differentiated between social groups. Use of the predication type however, seemed to depend primarily on the task itself. The findings demonstrate that status differences in speech behavior at one level of linguistic analysis cannot be taken as evidence that similar status differences exist at another level.

Levels of Analysis and Social Class Differences in Language

Current work in sociolinguistics reflects two somewhat different approaches to the problem of discovering relationships between speech behavior on the one hand and the social characteristics of the speakers on the other. In the investigations of Labov (1966, 1968), Shuy et al. (1967) and Wolfram (1969) a linguistic variable is formally defined and its variants isolated for quantitative analysis. Phonological and grammatical (morphological) features have been the primary focus of study. The influence of situation is accounted for by distinguishing among speech contexts (formal-informal) and styles (casual-careful/ spontaneous) (Labov, 1966: 100). These studies have demonstrated that in the case of certain linguistic correlates of social stratification, it is the frequency of the "nonstandard" or less-valued variant, rather than its occurrence per se which discriminates among status groups. A progressive difference in the frequency of a particular variant between status groups is called "gradiant" stratification. A more clear cut or abrupt difference in the frequency of a variant between status groups is called "sharp" stratification. The former is said to occur more frequently for phonological, the latter more frequently for grammatical variables (Wolfram, 1969: 207). An example of a sharply stratified variable is the low incidence of multiple negation in the two-middle class groups of Negroes and its relatively high incidence in the two working-class groups of the Detroit Negro population (Wolfram, 1969).

The work of Bernstein (1962, 1964), Lawton (1968), and Hawkins (1969), having as its impetus a theory which predicts different social distributions of linguistic codes entailing "qualitatively different verbal planning orientations" (Bernstein, 1962: 221), isolates for examination linguistic features which are presumed to reflect different selections of lexical or structural options available in the language. The frequency of members of grammatical

classes or categories have been counted (Bernstein, 1962) across social classes. More relevant to the present paper, a recent study by Hawkins (1969) examines the frequency of use of a syntactic category, the nominal group, and the grammatical elements included in it. His study reports on the social class distribution of the prononimal and determiner reference systems, relating their use to the functions of the speech situations sampled (narration and description). Hawkins' study, in addition to showing that middle-class children used more parts of speech associated with the noun, also found that middle-class children exhibited more sensitivity to the different audience needs imposed by the descriptive task in using fewer exophoric pronouns in that task than did the working-class children.

In none of the studies cited, however, has there been an examination of the effect of the linguistic level of analysis on the (potential) socially diagnostic significance of the findings. By levels we refer to the successively integrated layers of language structure reflected in the linguistic operations whereby higher level units are analyzed into lower level components. If we are concerned with the socially discriminative power of linguistic variables, it is necessary to ask at what level or levels of linguistic functioning distinctive distributions may occur. If we are interested in the inferences that can be made about cognitive functioning or cognitive abilities, we must ask how extensively differences in the lower levels of language form may be traced in the increasingly complex levels of language use.

The present study suggests a procedure for progressive analysis of a ranked sequence of linguistic variables. The progression could, of course, be carried downward to a finer grained morphological or phonological level or upward to a broader categorization of predication. The study investigates the incidence of standard/nonstandard verb forms (grammatical), the selection of functionally equivalent verbs

(lexical) and the incidence of choice of a predication type (referential) in the performance of two tasks. The three levels of analysis will be designated as first level (referential), second level (lexical) and third level (grammatical). The purpose of the study is to determine the level of language structure at which frequency distributions of variables appear in groups having different social status characteristics.

Procedure

The corpus of speech examined was transcribed recordings of pairs of children performing three problem-solving tasks.[1] The tasks were constructed so that two participants having complementary information could communicate verbally (visual communication was blocked by a screen between the participants) to accomplish the goal of the task. In Task I participant A holds a single drawing of an imaginary animal or object and participant B has a sheet of seven figures which differ from one another on four dimensions. The task is completed when B chooses from his array the figure which matches that held by A. There were ten subtasks of this task. Task II consists of building molecular models. A is given a constructed model. B is given a partially constructed model and the task is to complete the model by adding sticks, balls, and springs. There were two subtasks in this task. Task III consists of drawing a path on a map made up of routes and landmarks. A is given a map with the path drawn in. B is given the map without the path and must follow A's path to the terminal point. This task also included two subtasks. In all tasks the participants alternated as A or B. The instructions set no time limit to the task, and participants were encouraged to converse freely.

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[1]The results of performance measures as well as further details of the administrative procedures are reported in Baldwin and Garvey (unpublished manuscript).

The subjects consisted of forty-eight Negro and forty-eight white fifth-grade children within the IQ range of 85-115. Half of each group represented low and half middle socioeconomic status (SES). Six dyads of girls and six dyads of boys from each of the four population groups (black, white; low and middle SES) carried out the tasks in homogenous dyads in the presence of a white administrator of the same sex as the dyad. The groups were similar in respect to their total verbal output (number of words), which suggests that the performance of no single group was especially depressed by the experimental setting or by the demands of the tasks. Speech within the dyads was spontaneous and fluent.

Analysis

A single variety of a predication type was chosen for analysis. The variety occurred with sufficient frequency in all the transcripts to permit a three level analysis. The variety will be called the possessive construction, although it does not include all the potential realizations of the transformationally complex possessive relationship discussed by Lyons (1969: 39-395). The two-person construction showing an associational relationship between Noun 1 and Noun 2 (in which N1 dominates N2), the nouns being linked by a form of the verb have or the verb got is thus the construction chosen for analysis.[2] We would suspect, and indeed do find that speakers have several options in expressing association of an attribute with a figure or model. The following examples are taken from the transcripts: (Hesitations and repetitions are not noted, periods represent pause preceded by falling intonation.)

"It has wings. And it has two eyes. His head is
shape like a triangle. And his body is like a spear."

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[2] Bach (1967) suggests that have (and be) is a transformationally inserted element attached to the auxiliary mode where no lexical verb has been selected, thus questioning the existence of have at the level of deep structure. He implies that got might be treated similarly. This argument does not directly affect the validity of choice of this construction for the levels of analysis in the present study.

(and from another subject)

"Is his nose big? Does he have a big nose like a clown?"

(same subject in next subtask)

"Does his mouth go straight? Do he have kinda little eyes? In his glasses do you see anything white?"

The option which we are interested in examining is the possessive construction which is defined as any construction containing got or have as the main verb linking two noun phrases in a possessive relationship. This definition will include instances of discoursal ellipsis of N1, e.g., "Got a red stripe?" It will exclude the following, non-possessive uses of get-got: pseudo-passive, "He got caught."; resultative, "It got cold."; benefactive, "He gets a point."; and the modal, "You got to go.", or "You've got to go." The definition will also exclude use of have as auxiliary or modal, e.g., "He has lost the spring.", "You have to choose."

The first level analysis (referential) presents the frequency of occurrence of the possessive construction (as defined above) in Task I, II and III. Although all counts were made for each member of the dyad separately and then combined, the dyad was used as the unit of analysis. Conversations are, of course, a dynamic interaction and either participant can be influenced by the speech behavior of the other. This fact along with the fact that dyads were homogeneous in respect to the status characteristics (the independent variables) justifies the use of the dyad rather than the individual as the unit of analysis. It was assumed that the tasks, though similar in respect to discoursal type, would show different distributions of the possessive construction as a function of the different topics of conversation. It was predicted that no status differences could be present at this level of analysis, Negroes and whites, middle and low SES groups and males and females responding to the demands of the task by choosing the possessive construction with approximately equal frequency.

The second level analysis (lexical) separates the frequency of use of possessive constructions employing got from those employing have as linking verb in Tasks I and Tasks II combined. (Task III was eliminated from this and from the third level analysis because the task elicited such a small number of variants of the possessive construction.) Though not a frequently used linguistic variable, the choice of got as opposed to have in functionally equivalent contexts such as those chosen for analysis may be a stylistic marker. One study (Stolz and Bills, 1968) does contrast the use of have and have got as dialectal variants, finding that in Central Texan English the form have got is more frequent in the working class group and have in the upper-middle class group. In the present analysis items such as "Has the rabbit got whiskers?", were, of course, counted as instances of the got variant as main verb along with such items as "Do it got stripes?", whereas such items as "Do it has stripes?", were classified with the have variant. It was predicted on the basis of the Stolz and Bills findings that the got and have variants of the possessive construction would show some responsiveness to the status variables, especially to socioeconomic status.

The third level analysis (grammatical) examines the incidence of standard and nonstandard variants of both got and have, using the data from Tasks I and II with the exception of a small number of nonstandard participles, the inclusion of which would have entailed counting a single construction twice as nonstandard, e.g., "Do he has stripes?".

The following frequently studied features were tabululated as nonstandard for the got and have variants:

1. All instances of lack of subject-verb agreement in both positive and negative constructions with have as main verb: "He have wings." "Do he have wings?" "They has round eyes." "It don't have a hat."
2. All instances of lack of subject-verb agreement in positive constructions with got as main verb: "Have it got a hat?" "Is it got stripes?" "It gots a long neck."

3. All instances of ain't as negative of got, e.g., "It ain't got none.", and of don't as negative of got, e.g., "It don't/doesn't got none."
4. Absence of auxiliary verb in verb phrases in which got or have is the main verb under the following conditions:
   a. in interrogative clauses beginning with a question word: "What it have?", "What it got?"
   b. (for got only) in declarative clauses: "It got two feet."

Tabulated separately were those verb phrases in interrogative clauses designated as anomalous, i.e., constructions which through ellipsis could represent either a standard or nonstandard underlying form. The item "He got two?" could represent, within the population sample, an underlying "Has/Have he got two?", or "Do/Does he got two?" It could also represent a non-inverted interrogative clause (an intonationally marked question) with absence of auxiliary, e.g., "He's got two?" Since such forms could not be unambiguously assigned to either standard or nonstandard, they were brought together in the category anomalous, and excluded from the standard/nonstandard count.

The detailed tabulations were reduced to four for each dyad. These were number of nonstandard items for got and have; number of standard items with got and have; number of anomalous items; and number of nonstandard items minus anomalous items. It was predicted that the distribution of non-standard items would, consonant with the findings reported by Shuy et al. (1967) for Detroit and by Labov et al. (1969) for New York City, reflect both SES and racial differences and that these differences would show further distinctions within groups for sex. It was also predicted that the incidence of anomalous items, (consisting of items showing ellipsis, which is associated with relaxed speech) would be approximately the same for all groups.

Results

Four separate analyses of variance were performed. In all of these analyses the data were percentages which were then converted through the use of an arc-sine transformation in order to counteract any effects of correlations between means and variances.

The aim of the first level analysis (referential) was to determine those factors associated with the choice of the possessive construction. As an indication of the amount of speech represented in the transcripts of the dyads, the mean total verbal output (TVO), across the three tasks, for all dyads combined is 2,888; while the range of means for the eight experimental groups extends from 1,670 to 3,747. These differences among the population groups are not significant. The incidence of possessive construction use across the three tasks ranges from 2.5 to 4.3 percent of the TVO for the eight groups, while the mean for all dyads is 3.3 percent.

The main effects investigated at this level were SES, Race, Sex and Task. Both SES and Race prove to be nonsignificant variables. Although Sex is significant at the .05 level, $F(1,40)=5.75$, Task contributes by far the greatest amount of variance at this level of analysis, $F(2,80)=195.1$, $p > .01$, with Task I eliciting the greatest incidence of the possessive construction. In other words, as measured by the incidence of choice of the possessive construction, SES and racial differences were not associated with the manner in which dyads responded to the changing referential requirements of the tasks. However, male dyads did use more possessive constructions than did female dyads. A further analysis of interrogative clause types is being carried out which may help to explain this presently uninterpretable finding.

The aim of the second level analysis (lexical) was to determine the factors associated with the use of the got as opposed to the have variant of the possessive construction. For each dyad, the percentage of the total number of possessive constructions (in Tasks I and II only) employing the got variant as opposed to the have variant was determined. As an indication of the amount of speech represented in the transcripts of the dyads for Tasks I and II, the mean TVO across these two tasks for all dyads combined is 2,208 words, while the range of means for the eight experimental groups extends from 1,143 to 2,637 words. The incidence of possessive construction use across the two tasks ranges from 3 to 5 percent of the TVO for the eight groups, while the mean for all dyads is 4 percent.

In this analysis of variance, as in the first, SES, Race, Sex and Task were the independent variables examined. The only main effect which reaches significance is SES, $F(1,40)=4.74$, $p < .05$. Thus, the use of got as opposed to have as the linking verb in the defined possessive construction distinguishes between the two socioeconomic status groups. The lower SES group uses got more frequently than does the middle SES group, which prefers the have variant. The SES effect is somewhat modified through its interaction with Sex x Task, although the Sex x Task interaction alone is inconsequential. In the absence of better understanding of the differential effects of specific task or topic requirements on the speech of subcultural groups of subjects, the third-order interaction remains uninterpretable. However, the failure of Task to reach significance as main effect raises the possibility that the lexical choice as measured by predominant use of got or have remains fairly stable for dyads throughout the experimental sessions.

The third level analysis (grammatical) consisted of two parts. The aim of the first part was to examine the factors associated with the incidence of anomalous constructions while the aim of the second part was to determine the factors associated with the use of nonstandard forms of verb phrases with got and have as main verbs. In these two analyses of variance Tasks I and II were combined. This decision seemed reasonable since in the second level analysis the choice of got or have was found to be consistent for a given dyad across tasks. Furthermore, Tasks I and II are identical in respect to those dimensions such as status of interlocutor, setting and channel of communication, which are generally controlled in sociolinguistic investigations of standard/nonstandard speech. Thus, in both analyses the main effects investigated were reduced to SES, Race and Sex.

For each dyad the percentage of the total number of possessives which were classified as anomalous, across Tasks I and II, was determined, thus providing the data for the first part of this analysis. The number of anomalous utterances was then subtracted

from the total number of possessives, and the percentage of this new total defined as nonstandard was calculated. The first analysis revealed no significant differences among the groups in the use of anomalous constructions. Thus all groups showed approxiamtely the same amount of discoursal ellipsis. The use of nonstandard forms as investigated in the second analysis, however, did differentiate among the groups. All three main effects were significant, $F(1,40)=64.31$, $p < .001$, for SES with low SES associated with greater incidence of nonstandard forms; $F(1,40)=15.60$, $p < .001$, for Race with Negroes using more nonstandard forms than whites; and $F(1,40)=8.81$, $p < .01$, for Sex with males using more nonstandard forms than females. One of the second-order interactions, SES x Race, also reached significance, $F(1,40)=26.64$, $p < .001$. Thus, the use of nonstandard forms differentiates between social groups, sexes and races, with the effect of race becoming considerably stronger for the lower SES group.

A summary of the results at the three levels of analysis discussed above is presented in Table I.

TABLE I

Summary of Results at

Three Levels of Analysis

		Dependent Variables			
		Level 1 Referential	Level 2 Lexical	Level 3 Grammatical	
				A Anomalous	B Standard Nonstandard
	Data Base	% Possessive Construction of TVO	% Got vs. Have of Total Possessives	% Anomalous Construction of Total Possessives	% Nonstandard Constructions of Total Possessives minus Anomalous
Independent Variables	SES	n.s.	**	n.s.	***
	Race	n.s.	n.s.	n.s.	***
	Sex	*	n.s.	n.s.	**
	Task	**	n.s.	--	--
Interactions			SES x SEX x Task*		SES x Race***

* $p < .05$

** $p < .01$

*** $p < .001$

Summary and Discussion

The purpose of the study was to illustrate an approach to the problem of relating status characteristics of speakers to differences in the form or selection of linguistic elements occurring at different levels of language organization. Three levels of linguistic analysis were defined, grammatical, lexical and referential, and the distribution of the appropriate realizations of a single predication type were examined at each level.

The findings at each level of analysis were, in general, consonant with those of earlier research which has examined one or more unrelated or non-sequenced linguistic correlates of social stratification. Frequency of choice of the possessive construction, the dependent variable in the first level analysis (referential), did not differentiate between SES or racial groups. The primary determinant of frequency of choice of the possessive construction was Task. As each of the three tasks contained a different topic and different manipulanda (but were very similar in respect to participant functions and interaction requirements), it seems important to stress the possible influence of the referential demands of the task on this level of speech behavior. The further finding that males chose the possessive construction more frequently than females cannot be explained on the basis of previous research. However, the finding that sex differences can appear at this level of analysis is of potential importance in the design of further studies of the relationship of status characteristics to frequencies of linguistic elements.

Lexical choice of either the got or have variant as the main verb of the possessive construction was the dependent variable of the second level analysis (lexical). SES is the only status characteristic which predicts this choice. Furthermore, the choice seems to be relatively impervious to referential differences in the tasks. This finding may suggest that with situational variables such as status of interlocutor and setting held constant certain functionally equivalent lexical choices may be fairly constant for dyads of speakers.

The incidence of anomalous and of nonstandard forms was the dependent variable in the third level of analysis (grammatical). It is interesting to note that the incidence of the anomalous constructions representing ellipsis of clause initial auxiliary verbs is similar in all subject groupings. If this feature is a characteristic of casual, relaxed speech, then it is interesting to speculate that such ellipsis might prove to be one of a class of variables reflecting speech style across SES and racial groups of speakers.

The incidence of nonstandard forms of verb phrases with got and have as main verbs confirms and extends previous observations (Garvey and McFarlane 1970) of children's speech in the same urban area.

In a recent critical review Cazden (in press) discussed a number of situational factors (topic, task, listener or listeners, interaction) that have been employed as independent variables in the examination of linguistic differences in the speech of children of different social status characteristics and urged that the effect of situation be explored more systematically. The present study illustrates the need for distinguishing among levels of linguistic differences which interact with situational factors on the one hand and with social status differences on the other. The findings demonstrate that SES and race differences in speech behavior discovered at one level of linguistic analysis can not be directly adduced as evidence that similar status differences exist at another level.

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